

The AI adoption gap: Gender and generation among small business owners

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Executive Summary

Artificial intelligence is rapidly becoming embedded in everyday business operations, and small businesses have accelerated their adoption as AI tools grow more accessible and easier to deploy. However, this democratization has not uniformly reached all business owners. Longstanding differences in technology adoption across gender and age appear to be extending into the AI era, raising questions about who will capture the productivity gains of this new technology.

This report examines differences in AI adoption across business owner demographics using Chase Business Banking transaction data from 2019 through 2025. Our transaction-based approach tracks AI-related purchasing behavior across business owner gender and generational cohorts, providing a unique lens on AI adoption across these demographics. We find:

Key Findings

01 Male owners consistently adopted AI at a higher rate, with the gap widening starting in 2023.

02 While Millennial and Generation Z owners showed the highest AI adoption rates, the gender gap was most pronounced in the youngest generation.

These findings reveal substantial variation in AI adoption across business owner demographics. The widening gender gap among younger business owners is particularly concerning. As Generation Z represents a growing share of business owners, gender differences in access to AI-driven productivity gains may widen over time.

For policymakers, these trends indicate that supporting broader adoption may require specific interventions, such as AI literacy and skills training targeted at underrepresented groups, particularly younger female entrepreneurs. Community-based networks and peer mentorship programs could also help business owners navigate AI adoption challenges, ensuring technological advances reduce rather than widen existing disparities in small business outcomes.

Introduction

In [Wheat, Mac, and Passalacqua \(2026\)](#), we documented dramatic increases in AI adoption among small businesses, though significant gaps persisted across employer status, revenue size, and industry. Existing research has documented systematic differences in technology adoption across business owner demographics, with gender and age emerging as significant predictors of digital technology uptake (Orser, Riding, and Li 2019).¹ Recent studies have begun examining these patterns also in AI adoption, though primarily through consumer surveys and self-reported data. They document gender gaps in generative AI usage (Deloitte 2024; Otis et al. 2024) and age-related differences in generative AI adoption (Meyer 2011; BPC 2023). However, evidence on actual business purchasing behavior remains limited, as most research relies on self-reported adoption rather than observed transactions and focuses predominantly on generative AI.

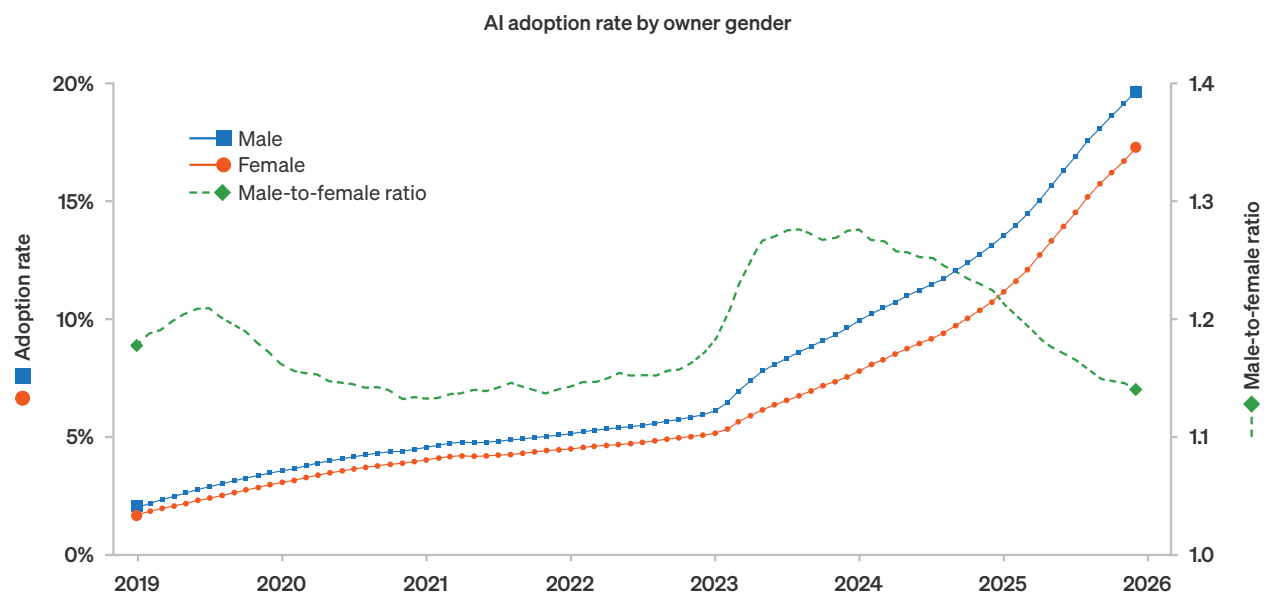
This report addresses this gap using transaction data from de-identified Chase Business Banking deposit accounts spanning 2019 through 2025. By tracking payments made to AI services rather than relying on self-reported data, we observe how adoption has evolved by business owner gender and four generational cohorts: Baby Boomers, Generation X, Millennials, and Generation Z. Our approach captures the broad landscape of AI services, including but not limited to generative AI tools.

¹ This gap is not limited to technology adoption. For instance, Farrell, Wheat, and Mac (2019) found that female-owned firms start with revenue levels 34 percent lower than male-owned firms and experience slower revenue growth over time. Small businesses with older owners are more likely to survive compared to younger generations.

Finding 1: Male owners consistently adopted AI at a higher rate, with the gap widening starting in 2023.

Women-owned businesses have been documented to generate lower revenues and face greater capital constraints than male-owned businesses. These factors can shape decisions regarding investment in emerging technologies. We assess whether this extends to AI adoption by examining adoption rates by business owner gender.

Figure 1: Newer business cohorts were more likely to incorporate AI from the onset.



Note: The sample consists of firms that were active between 2019 and 2025. A firm is classified as an AI adopter if it paid for at least one AI service during this period. Adoption rates are cumulative over time. Owner gender is assigned only when the firm has at least one owner with reported gender and, for multi-owner firms, a clear gender majority; otherwise, it is omitted.

Source: JPMorganChase Institute

Figure 1 shows the evolution of AI adoption rates by business owner gender from 2019 to 2025, as well as the ratio of their adoption rates. Male business owners consistently adopted AI services at higher rates than female owners, though the magnitude of this gap varied considerably over time. The gender adoption gap also holds consistently across industries, as shown in Figure A1, suggesting that the disparity is not driven by sectoral composition effects. One potential explanation for the gender gap is the lower share of female employer firms compared to female nonemployer firms.² In 2019, adoption rates remained low for both groups, with male-owned businesses at approximately 2 percent and female-owned businesses at 1.7 percent, representing a modest 0.3

² For instance, in January 2025 employer firms accounted for 17 percent of all female-owned firms, compared with 23.5 percent among male-owned firms. Wheat, Mac, and Passalacqua (2026) showed that employer firms adopted AI at a higher rate over 2019–2025.

percentage point gap. This relatively narrow disparity persisted through early 2023, when male owners reached 6.1 percent adoption while female owners approached 5.2 percent. However, 2023 appears to mark an inflection point where the trajectories began diverging more substantially. By the end of 2025, male-owned businesses reached 19.7 percent adoption while female-owned businesses reached 17.2 percent, creating a 2.5 percentage point gap, more than eight times larger than the initial disparity observed in 2019.

The ratio of male-to-female adoption provides a measure of the relative magnitude of the adoption gap. In 2019, male-owned businesses adopted at a rate 1.18 times (or 18 percent) higher than female-owned businesses. This ratio reached 1.28 in 2023 and then by the end of 2025, it fell to 1.14. This means that female-owned businesses are catching up proportionally as overall adoption rises, even if the absolute gap is widening.

Taken together, these results suggest that while female business owners are responding to increased AI accessibility, there may be structural barriers that prevent them from closing the absolute gap despite the increase in overall AI adoption.

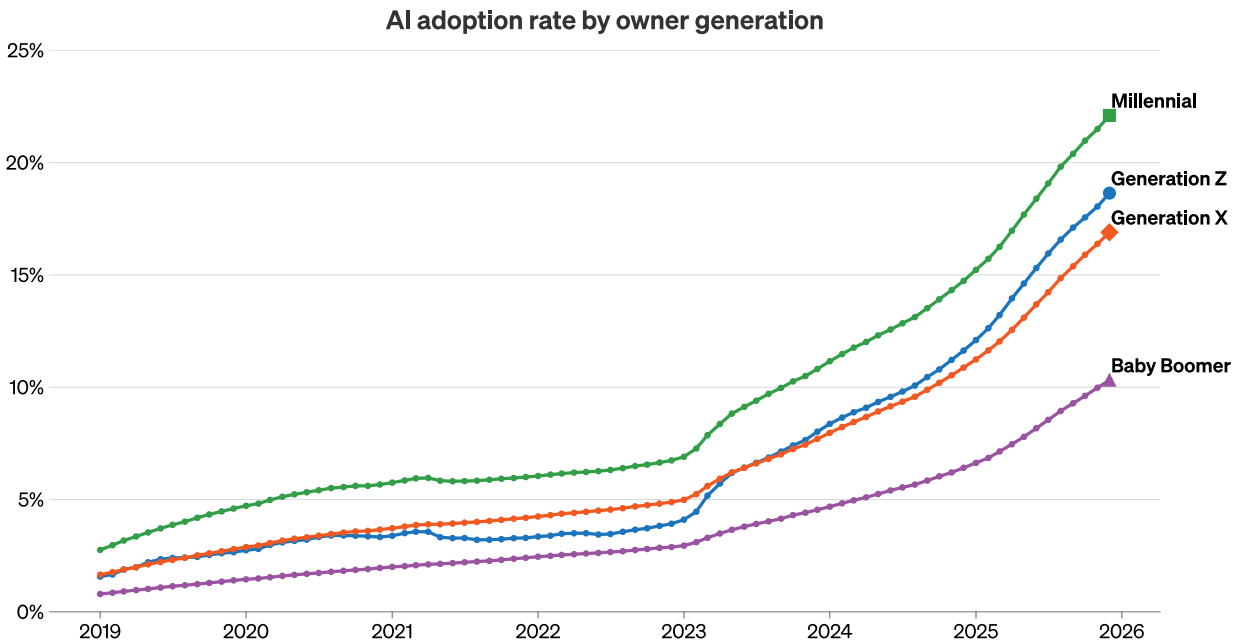
These patterns align with broader evidence on gender differences in technology adoption and business outcomes. Consumer-level research on generative AI adoption shows similar gender gaps, with women's overall adoption rates trailing men's by substantial margins despite recent acceleration (Deloitte 2024). A Harvard Business School meta-analysis examining 18 studies covering over 140,000 individuals found women had 22 percent lower odds of using generative AI than men (Otis et al. 2024). Research examining gender disparities more broadly has documented several factors affecting technology adoption: women entrepreneurs face distinct barriers including limited access to capital, time constraints from caregiving responsibilities, and knowledge gaps about information and communication technology tools (Orser, Riding, and Li 2019; OECD 2025). If women-owned businesses systematically lag in adopting productivity-enhancing technologies like AI, existing performance gaps could potentially widen rather than narrow over time.

Finding 2: While Millennial and Generation Z owners showed the highest AI adoption rates, the gender gap was most pronounced in the youngest generation.

Over half of small business owners are age 55 or older, even as Millennials and Generation Z represent a growing share of new business formation (U.S. Census Bureau 2020). As younger generations typically demonstrate greater digital familiarity and faster uptake of new technologies,³ we examine whether these patterns hold for AI adoption by analyzing adoption rates across four generational cohorts. These demographic trends in adoption could meaningfully influence how quickly AI becomes integrated into small business operations.

³ For instance, according to a survey conducted by the Pew Research Center, 93 percent of Millennials own smartphones compared to 90 percent of Generation X, 68 percent of Baby Boomers, and 40 percent of the Silent Generation, and 86 percent of Millennials use social media compared to smaller shares among older generations (Vogels 2019).

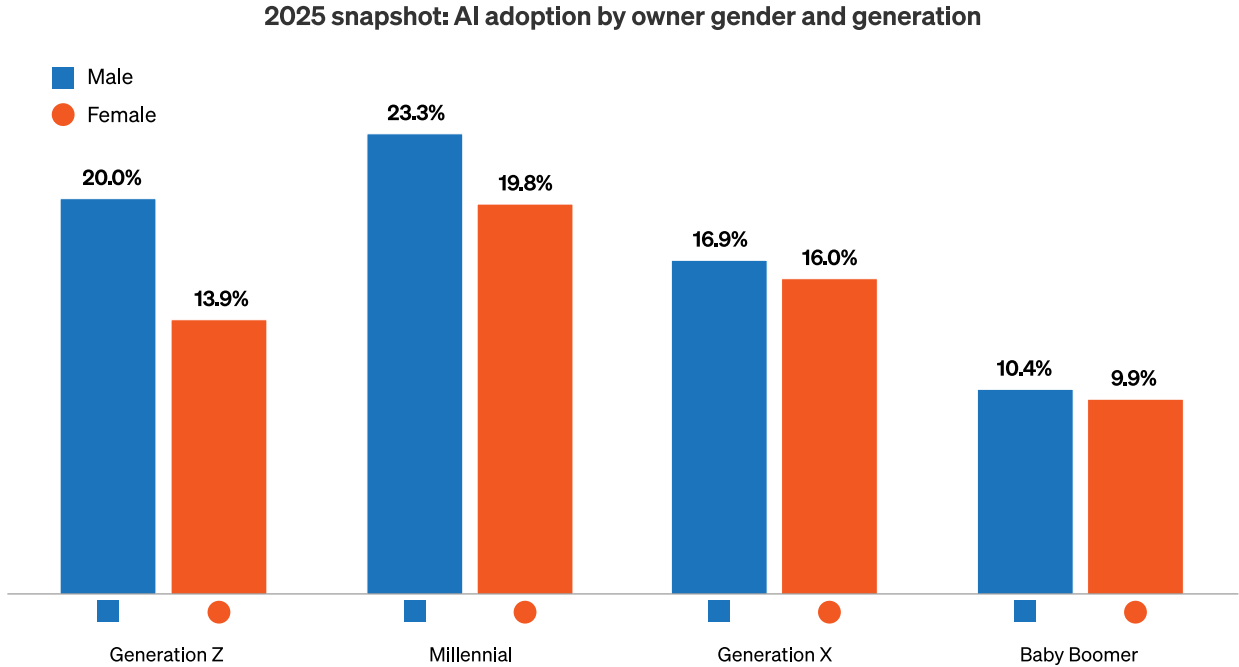
Figure 2: While Millennial owners have historically adopted AI at a higher rate, Generation Z owners have emerged as the second-highest adopters.



Note: The sample consists of firms that were active between 2019 and 2025. A firm is classified as an AI adopter if it paid for at least one AI service during this period. Adoption rates are cumulative over time. A firm's owner generation is assigned based on the youngest owner's age; firms without owner age information are omitted.
Source: JPMorganChase Institute

Figure 2 shows AI adoption rates by business owner generation from 2019 to 2025. Millennial owners experienced the highest adoption rates throughout the period, starting at approximately 2.8 percent in 2019 and reaching 22.1 percent by the end of 2025. Generation Z owners, who began the period with adoption rates comparable to other generations, experienced a sharp acceleration and overtook Generation X by mid-2023, reaching approximately 18.6 percent adoption by 2025. While still lagging behind Millennials, as more members of Generation Z reach the typical age for business ownership, this cohort's high adoption rates may increasingly influence overall small business AI adoption patterns. Generation X owners showed moderate adoption rates, reaching approximately 16.9 percent by 2025. Baby Boomer owners showed notably lower adoption, reaching only 10.3 percent by 2025, less than half the adoption rate of Millennials. While all generations accelerated adoption after 2022, the gap between Millennials and Baby Boomers widened from approximately 2 percentage points in 2019 to 11.8 percentage points by 2025, suggesting that younger business owners are adopting AI at substantially faster rates than their older counterparts.

Figure 3: In 2025, the largest AI adoption gap between male and female owners is observed in the Generation Z group, followed by the Millennial group.



Note: The sample consists of firms that were active in 2025. A firm is classified as an AI adopter if it paid for at least one AI service by this period. Owner gender is assigned only when the firm has at least one owner with reported gender and, for multi-owner firms, a clear gender majority; otherwise, it is omitted. A firm's owner generation is assigned based on the youngest owner's age; firms without owner age information are omitted.
 Source: JPMorganChase Institute

Figure 3 examines the intersection of business owner gender and generation in 2025 AI adoption rates. The gender gap in AI adoption varied substantially across generations, with the largest disparity observed among Generation Z owners: 20 percent of firms owned by men adopted AI by 2025 compared to 13.9 percent of those owned by women, a gap of 6.1 percentage points. This gender gap narrowed considerably for older generations, with Baby Boomers showing only a 0.5 percentage point gap (10.4 percent vs. 9.9 percent).

These generational differences in AI adoption align with survey evidence. For instance, a 2024 Gusto survey of over 1,300 small business owners found that about two-thirds of Millennial and Gen Z owners have tried generative AI, compared to lower rates among Baby Boomer and Gen X entrepreneurs (Tremper 2024).⁴

⁴ A recent survey conducted by the Bipartisan Policy Center (BPC) in collaboration with Morning Consult highlights notable demographic gaps in AI familiarity among small business owners. According to the survey, 36 percent of male small business owners reported being very familiar with AI, compared to only 30 percent of female small business owners, indicating a gender gap in AI adoption. The survey also revealed significant generational differences: 49 percent of owners aged 18–34 reported being very familiar with AI, followed by 43 percent of those aged 35–44, 21 percent of those aged 45–64, and just 20 percent of those over 65 (BPC 2023).

More generally, these results complement evidence on age-related patterns in technology adoption. For instance, prior research has found that younger entrepreneurs are more likely to adopt digital technologies than older ones, with workforce age showing a negative relationship to technology adoption probability (Meyer 2011). As AI represents one of the newest and fastest growing technologies entering the business landscape, generational patterns in technology adoption and factors affecting them may be particularly relevant for understanding differences in productivity and competitiveness across small businesses.⁵

Implications

Lower barriers to entry have enabled the rapid acceleration of AI adoption among small businesses. However, this democratization has not reached all business owners. Substantial gaps persist across generational cohorts and between male and female business owners.

As policymakers consider how to support small business competitiveness in an economy where AI plays a growing role, addressing these persistent adoption gaps could help ensure broad-based access to the technology's benefits. We offer two key implications:

1. Targeted AI training on specific use cases may reduce gender and generational adoption gaps.

Although small businesses have accelerated adoption of AI, significant gaps persist. By 2025, younger generation owners far outpaced Baby Boomers. Female business owners lag behind their male counterparts in AI adoption in every industry. Most concerning, gender gaps are largest among the youngest business owners who will increasingly shape the small business landscape. Policymakers and business support organizations can develop training programs that specifically address these gaps, with particular attention to younger female entrepreneurs. Such programs could include primary AI applications as well as specific use-case identification tailored to underrepresented business owners, intended to build confidence alongside technical skills.

2. Community-based support and mentorship networks could reduce persistent gender gaps among younger cohorts.

The widening gender gap among younger business owners, despite this cohort's overall higher adoption rates, suggests that access to AI tools alone is insufficient to ensure adoption. Research consistently finds that women express greater concerns than men about AI data security, privacy, and trustworthiness (Deloitte 2024). These concerns, which may be particularly acute for younger and newer business owners with less established support networks, point to the value of trusted advisors who can provide guidance on AI tool evaluation and implementation. Programs that facilitate peer-to-peer learning and create spaces where business owners can discuss AI implementation challenges with others who share similar concerns can address adoption barriers that persist despite decreasing costs and increasing tool availability.

⁵ One potential driver of generational differences in adoption is trust in the technology: 45 percent of Baby Boomers say they do not trust AI, compared to only 18 percent of Generation Z and 21 percent of Millennials (Barna 2024).

Appendix

Sample construction and composition

Our sample consists of the same small business panel constructed in Wheat, Mac, and Passalacqua (2026) with the same activity, industry, and location filters.

To perform disaggregated analyses by business owner gender and generation, we first assigned gender and age information to firm owners in our sample. We use authorized signers on business accounts as a proxy for business owners.⁶

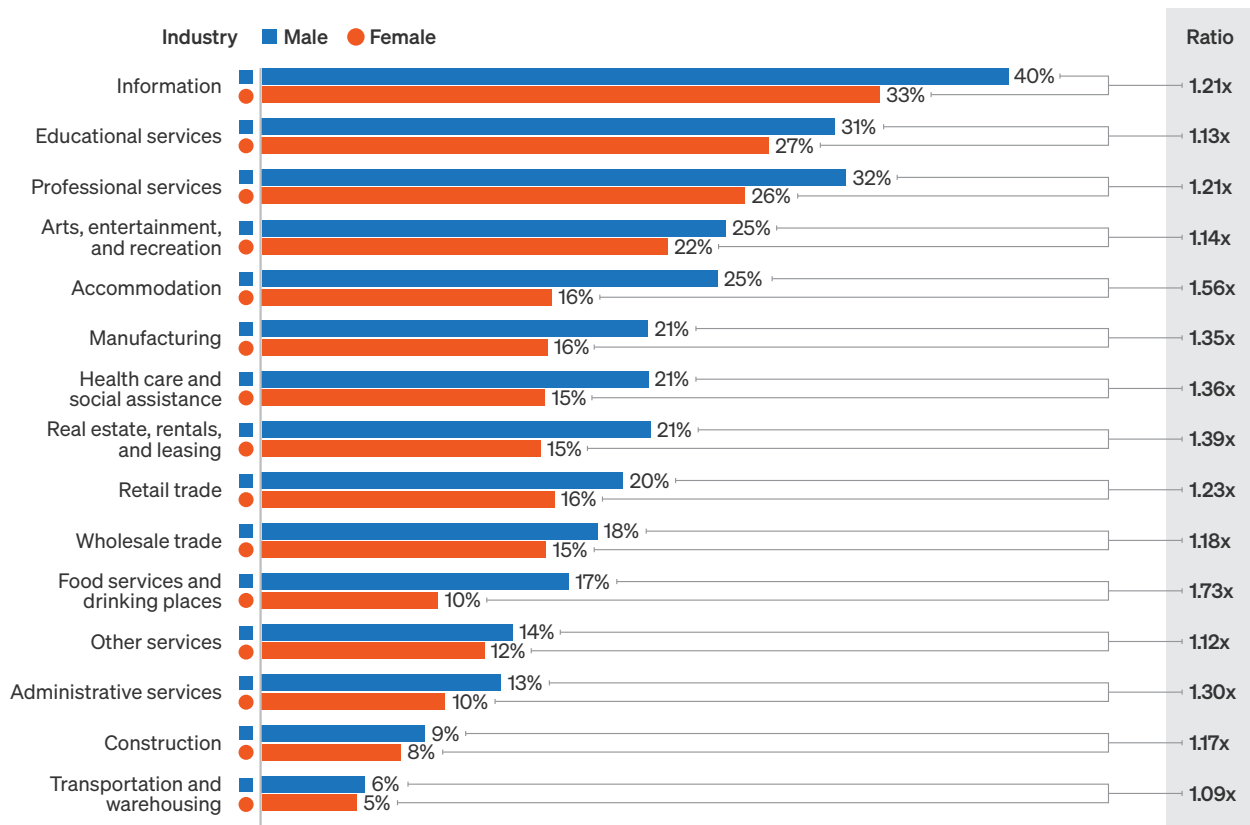
For gender classification, we assigned a gender to each firm only if it had at least one owner and a clear gender majority, defined as more than 50 percent of owners being either male or female. This resulted in 52 percent of sample firms classified as male-owned or female-owned.

For generational classification, we derived four generational cohorts based on the youngest owner's year of birth. These generational cohorts are the following: Generation Z (1997–2013), Millennials (1980–1996), Generation X (1965–1979), and Baby Boomers (1946–1964). Firms whose youngest owner belonged to the Silent Generation or had missing age data were excluded from this classification, yielding generation classifications for 90 percent of sample firms.

⁶ Sixty-one percent of the firms in our data have only one signer, and 24 percent have two signers. Some businesses do not have any identified signer: these account for 9 percent of our sample.

Additional figures

Figure A1: In 2025, male owners consistently adopted AI at a higher rate across industries.



Note: The sample consists of firms that were active in 2025. A firm is classified as an AI adopter if it paid for at least one AI service by this period. Owner gender is assigned only when the firm has at least one owner with reported gender and, for multi-owner firms, a clear gender majority; otherwise, it is omitted.

Figure A1 shows that in 2025, male business owners maintained higher AI adoption rates across industry categories. The ratio of male-to-female adoption rates ranged from 1.21x in information (where female owners adopted at 33 percent versus male owners at 40 percent) to 1.73x in food services and drinking places. Knowledge-intensive sectors such as professional services showed male adoption rates of 32 percent compared to 26 percent for female owners (a 1.21x ratio), while more capital-intensive industries like manufacturing demonstrated larger gaps (21 percent male versus 16 percent female, a 1.35x ratio). Notably, even in industries with relatively high female representation such as educational services and health care, male owners adopted at rates 1.13x and 1.36x higher respectively. This consistent pattern across diverse sectors suggests that the gender differences may reflect systematic barriers in adoption rather than industry-specific factors.

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